

FIG.1a.

Synthetic DNA Substrates Mimicking Transcriptional
Cis- Regulatory Elements

GC-box a: 5' -GGGAATTCAAGGGGGGGCAAGGATCCAG -3'

GC-box b: 5' -CTGGATCCTTGCCCCCGCCCTTGAATTCCC -3'

GC-box b MET: 5' -CTGGATCCTTGCCC^mCGCCCCTTGAATTCCC -3'

CRE a: 5' -GGGAATTCAAATGACGTCAAAAGGATCCAG -3'

CRE b: 5' -CTGGATCCTTTTGACGTCATTTGAATTCCC -3'

CRE a MET: 5' -GGGAATTCAAATGA^mCGTCAAAAGGATCCAG -3'

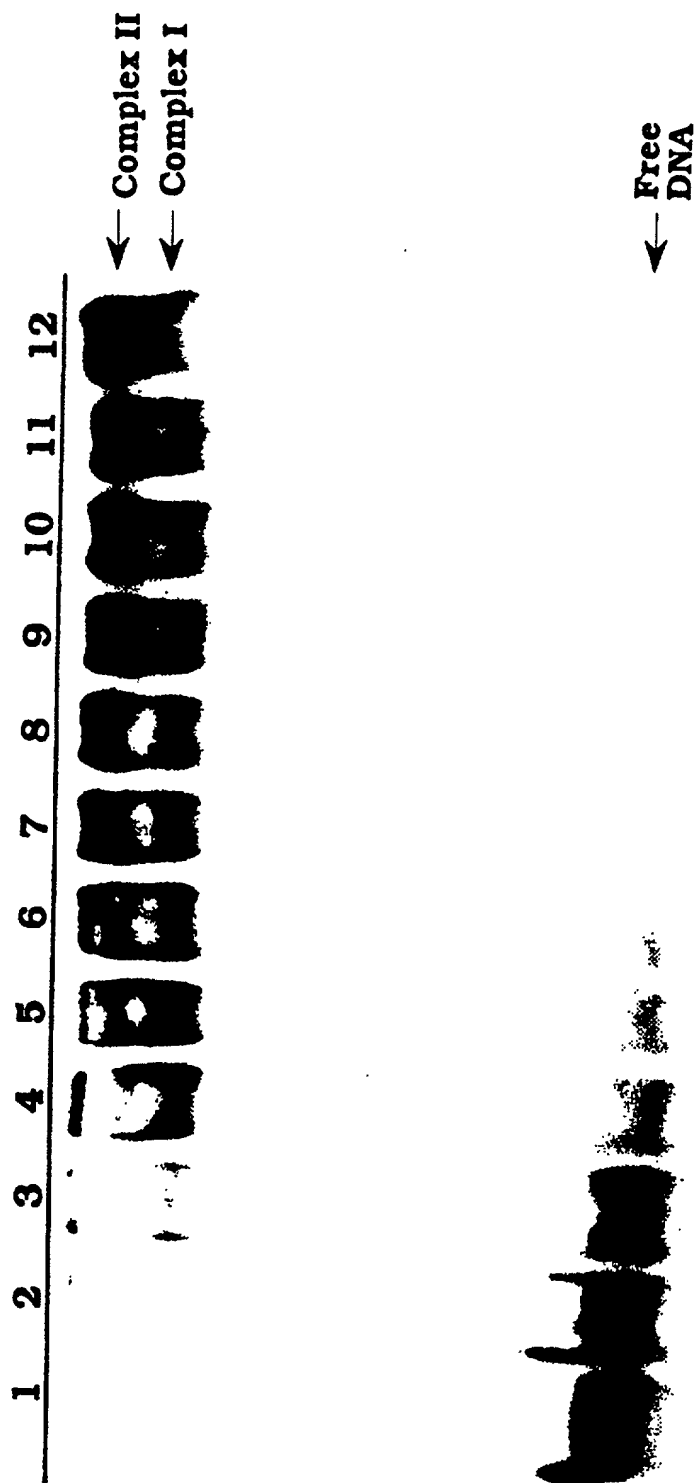
FIG. 1b.

NAME	NUCLEO- TIDES	Sequence	Kii IC50 (nM)
GC-Box b (SEQ ID NO: 10)	30	5'-CTGGATCCTTGCCCCGCCCCCTTGAATTCCC-3'	6800
GC-Box bMET (SEQ ID NO: 10)	30	5'-CTGGATCCTTGCCCCmCGCCCCCTTGAATTCCC-3'	20 15
GC Box pMET (SEQ ID NO: 10)	30	5'-CTGGATCCTTGCCCCmCGCCCCCTTGAATTCCC-3'	5
GC-Box cMET (SEQ ID NO: 13)	50	5'- CCTACCCACCCTGGATCCTTGCCCCmCGCCCCCTTGAATTCCTCCAC-3'	30
GC Box dMET (SEQ ID NO: 14)	22	5'-ATCCTTGCCCCmCGCCCCCTTGAAT-3'	50
GC-Box eMET (SEQ ID NO: 15)	14	5'TTGCCCCmCGCCCCCTT-3'	150
CRE aMET (SEQ ID NO: 11)	30	5'-GGGAATTCAAATGmCGTCAAAAGGATCCAG-3'	> 300

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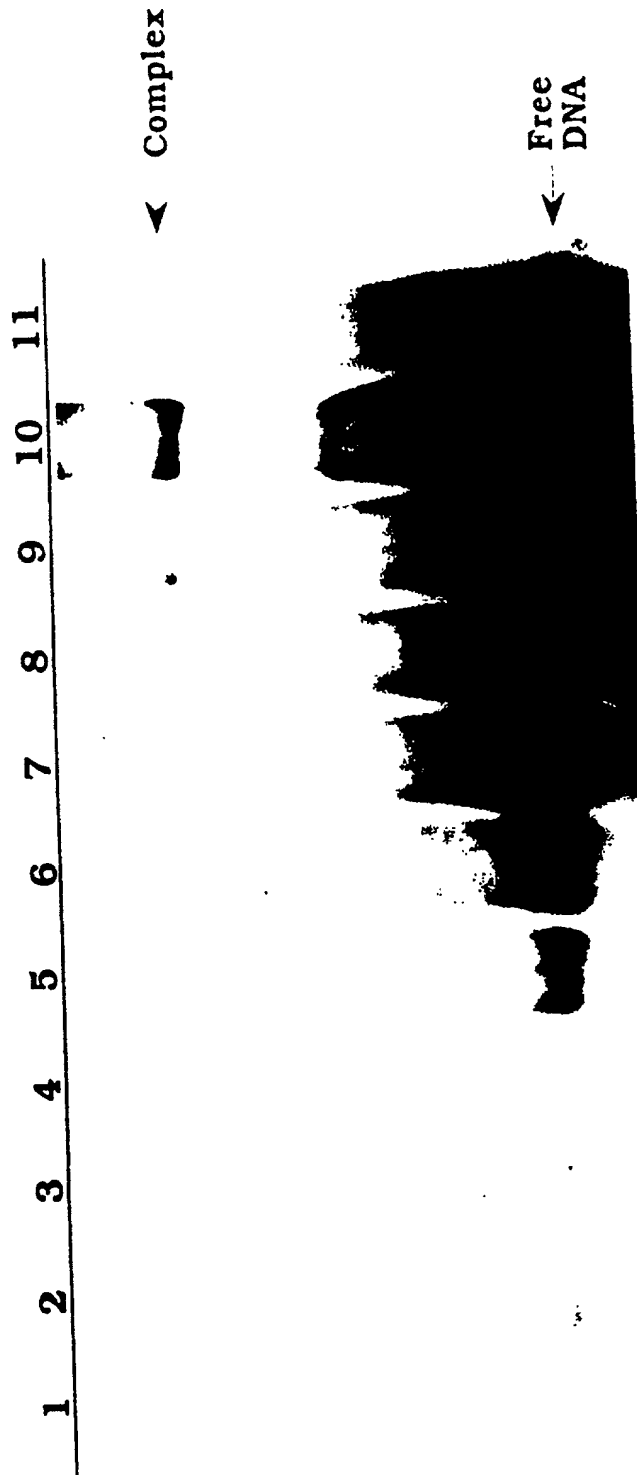
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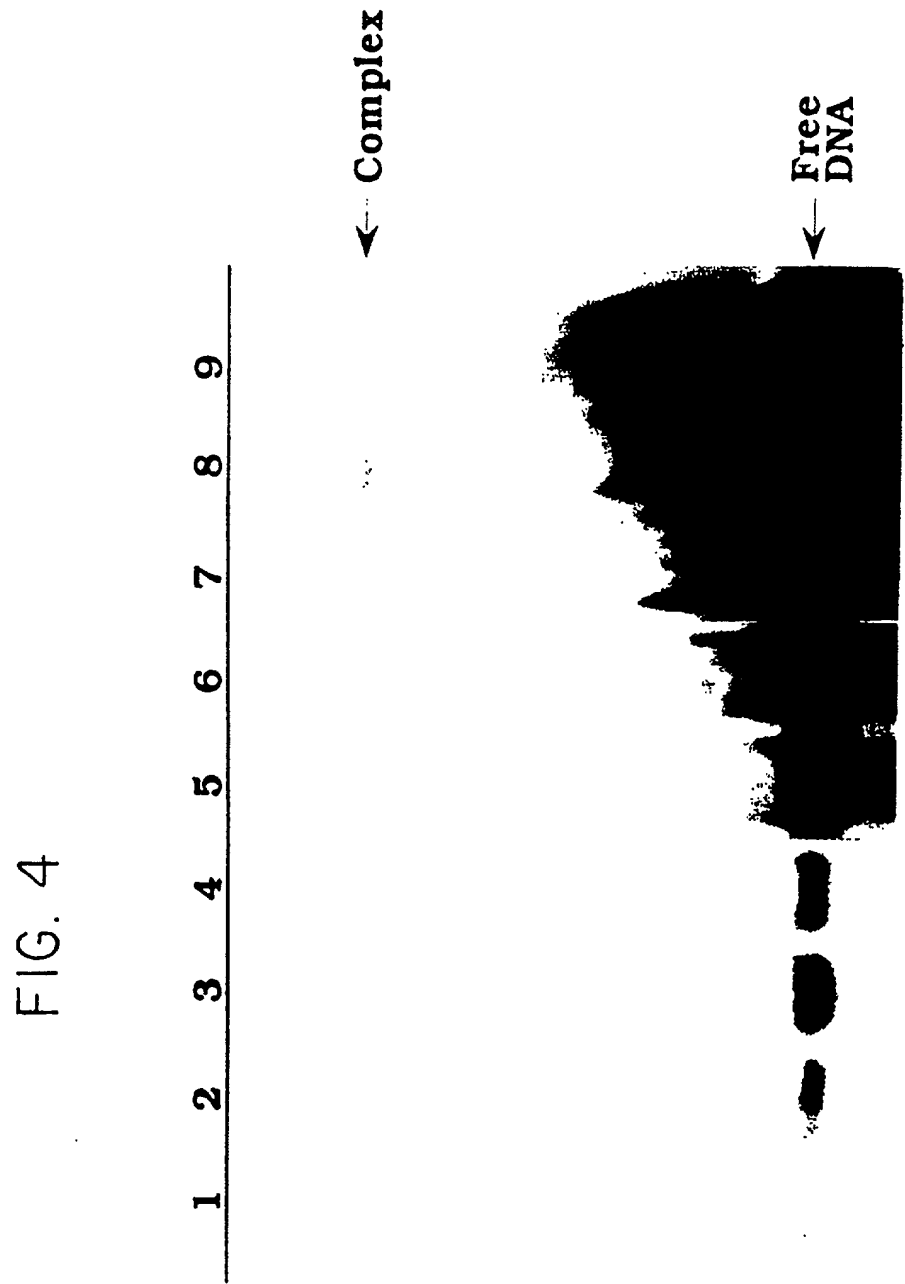
FIG. 2.



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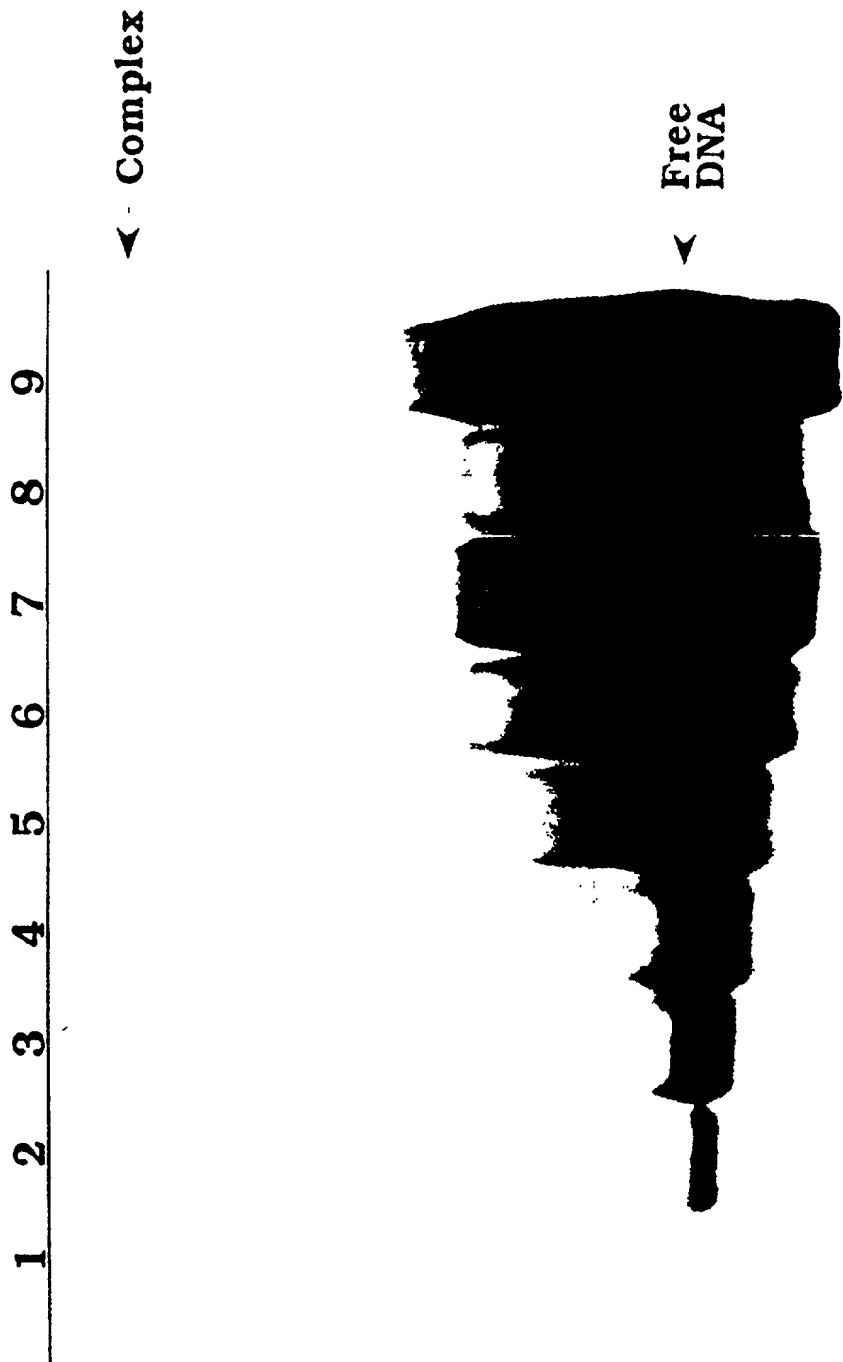
FIG. 3.





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FIG. 5



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FIG. 6.

Primer C

5'-GGGAATTCATGGATCCTAAANNNNNNNNNNCGNNNNNNNNNTTCAAGCTTGTGAATTCCC-3'3'-CCCTTAAGTACCTAGGATTTNNNNNNNNNNGCNNNNNNNNNAAAGTTCGAACACTTAAGGG-5'

Primer D

FIG.7a.

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STARTING POPULATION

GTGGGATGGGAACGAGTTGAGGAGGG
AGTGGTATGTATCGATTATACGTTGGG
GGAGGAAGTTTACGTATGGTATGGGG
TGGGAGGGGATTCCGAGGTGAGAGTTG
ATAAAGTATTAGCGTAAGAGATGAAG
TGGAGGAGTTTACGGTGTAATTGTTT
GGAGTAGGTAGACGTTAAGTATGATG
GTGGGAAGGGGACGAATTTGAAGGTG
TGGTAATGTATTCGTAAATGTAAGGG
TAATAGGGGAGACGTAAATGTAAGGG
GAGTGTAGAAGTCGTAAATAGATTTAG
TGAGTAGGAAAGCGAAGAGGTGTTGG

FIG.7b.

GENERATION 1

TAGGTATTGGGGCGGAAGGTGGGTGG
GGGGGTATAATACGGTGTTGGTAGGG
GGGTTGGGGTTTCTGTGGGGGGGTGT
TGTGGGTATGGGCGGTGATAGTGAAG
GGATGATGGGGTCCGAGAGTGGTGGTG
TAGTGGGTGGAGCCGAGTGGTGGTTGG
AGGGTGGGTGGGCGGAGTTGTTGTTG
GTGAGGAGGGAGCGGGAATGGGGGTG
GGGGGTGGGGAGCGGAGGGGGGTGAG
TGTTGGAGGGGGCGAAGGTGGTTTTG

FIG.7c.

GENERATION 3

GGGGGGGGGGGGCGAGGGGTAGATGG
GGGGGAGGGGTTCCGGTGATAGGTAGG
GGGGGGGGGGTACGTGGGATGGTATG
GTGTAGGGAGTGCCGAGGGGGGTGTAA
GGGGGGGGGGTAGCGGTTAGATGGTGG
GGGGTGAGGGGGCGGGGGTTAGTGGG
GAGGGGGGGGTTGCGTAGGGGGGGTGGG
TGTGGAGGTGGGCGGGAAAGGTGATG
GGGGGGATGGGACCGGATGGGGGGGGG
GGGGGTGGGGTGCCGAGAGAGTTGGGG
GAGGGGTGGAGGCGGAGGTGGGTTGG
GGGGGGGGGGGGCGATAAGGGTGTG

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FIG. 7d.

G#	GpT	TpG	GENERATION 5	TpG	GpT	G#
11	.	.	TGGGGGGGGG <u>CGGGG</u> AGTTGA	.	.	7
11	.	.	GGGGGGGAGGGG <u>CGGAT</u> AGTTGTGTG	5
10	GGGTGGGTGGGCGGTGGGGTGTGGG	...	...	9
10	.	.	GAGGGGGGAGCGGAGGGGGTTGGG	.	.	9
10	.	.	GGGGGGGAAGGGCGTGGGGTTGGGTG	...	...	8
10	.	.	-GGAGGGGGGGCGATGGGGTGGTGG	...	...	8
10	GGGTGGGGTGGCGTGTGGGGTGGG	...	...	8
10	.	.	GGGAGGGGTGGCGGTGGGTATGTGG	...	...	7
10	.	.	GGGAGGGTGGGCGGGTATGGAGTGG	..	..	7
10	.	.	GGGGGGGAGTGCCTGATGGGTGTG	....	..	6
9	.	.	GGGGGGGTGGATCGTGGGGCGAGGGG	.	.	10
9	GGGGTAGGTGGCGGGGGGGGTATGG	.	.	9
9	.	..	GGGATGGGGTGCCTGGGTATGGGGGG	.	.	9

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FIG. 7e.

G#	GpT	TpG	GpT	G#
9	•	••••	••••	7
9	•	•	•	6
9	••	•	••	7
9	•	••	••	6
9	••	••	••	6
9	•	••	••	5
9	••	•	•	6
9	•	••	•	7
8	•	••	••	9
8	••	••	••	9
8	••	••	••	8
8	•	••	•	8

GENERATION 5

GGGAGGGGTAGCGGAGTGTGTG
 GGGGTAAGGGCGTAAGAATGGGG
 GGGGGGTGTTCCGTAATGGGGGT
 GGTGGAGAGGGCGTGTGTAGGTAG
 GGGGGGTGTACGAGTTTGTGTG
 TGGTGAGGGGCGAAGAAGTGTG
 GGGGTGGGATGCGGAATAAGGATG
 TGAGGGGAGGGCGAATAGATGGT
 GGGGGAGTAAGCGGGGTGTGTG
 TGAAGGGGTGCGGGGTGTGGGG
 GTGGTATGGGGCGGGGTGTGTG
 TGGAGGGTAGCGGTGGGTGTGTG

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FIG. 7f.

GENERATION 5				
G#	GpT	TpG	GpT	G#
8	8
8	8
8	7
8	6
7	10
7	10
7	9
7	9
7	9
7	8
7	8
7	7

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FIG. 7g.

GENERATION 5				
G#	GpT	TpG	GpT	G#
7	•	•••	••	7
7	•••	••	••	7
7	••	••	••	7
7	••	••	•••	7
7	••	••	•••	6
7	••	••	••	5
6	•	•	••	8
6	••	•••	••	6
6	•	•••••	•••••	6
6	•••••	••	•	4
5	••	•	•	10
5	•	•	•	9

FIG. 8a.

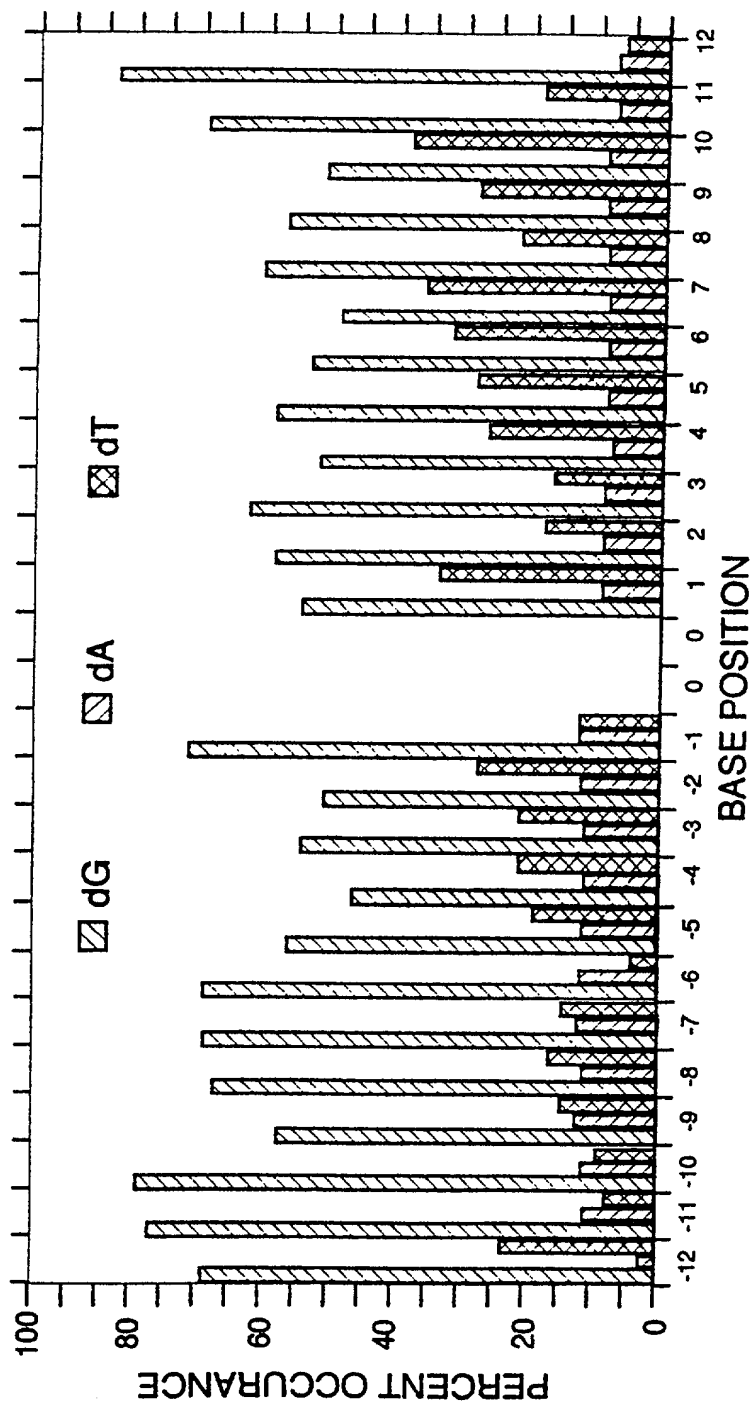


FIG. 8b.

[illegible]

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FIG.9a

DEFINITION Lyt-2.2 gene, T- cell differentiation antigen, 3' UTR.

ACCESSION GB_RO:MMLYT22

TGGGGGGGGGGCGGGGGGAGTTTGA
 |||||
 GAACAATGGGGCGCTGGGGGGGGCGGGGGCTTTAGCTATGTCAGAATTCA
 5100 5110 5120 5130 5140

DEFINITION homeo box 2.6 (Hox-2.6) mRNA

ACCESSION GB_RO:MUSHOX26

GGGATGGGGGTGCGGGGTATGGGGGG
 |||||
 GGGGAACAGCGAGCAGGAGGGGTGCGGGGTATGGGAGGGTCCCGGGCTTGAGC
 870 880 890 900 910 920

DEFINITION growth arrest-specific promoter gene, gas-1

ACCESSION GB_RO:MMGAS1PRA

GGTGGTGGTGATCGGGGTTGTGATGG
 |||||
 TGTCCTTCTGTGGTGGTAGAGGTCGTGTTGTGATGGTGGCTCGGTGTGTGT
 2480 2490 2500 2510 2520

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FIG.9b.

DEFINITION pim-1 proto-oncogene, pim-1 protein kinase, CpG island,
5' UTR region.

ACCESSION GB_RO:MUSPIM1

GAGGGGGGAGCGGAGGGGTTGGG
| | | | | | | | | | | | | | | | | |
GAGGGGTAGCCGCGAGGGGCGGAGCGGAGGGGAGGGCCCTGGTCCCGCCGCC
1500 1510 1520 1530 1540

DEFINITION neuronal dihydropyridine-sensitive L-type calcium
channel alpha-1 subunit mRNA, 3' UTR.

ACCESSION GB_RO:MUSDHPCC

CCCCACCCACAACGCCACCCCAACCC
| | | | | | | | | | | | | | | | | |
TCCTTAAATGGTGCGGTCCACCCCAACCGCCACCCCAACCCCACTGGAGCAAGG
8330 8340 8350 8360 8370 8380

FIG. 9c.

HUMAN SEQUENCES

DEFINITION Huntington's Disease Region, chromosome 4p16.3.
ACCESSION GB_PR:HSL1C2

DEFINITION Human Down Syndrome region of chromosome 21.
ACCESSION GB_HTG:HSAC000002

DEFINITION upstream region of HoxA7 gene, CpG island.
ACCESSION GB_PR:HSHCRDNA

DEFINITION chromosome 22 CpG island DNA
ACCESSION GB_PR:HS303B3

DEFINITION CpG island DNA.
ACCESSION GB_PR:HS167B9F

DEFINITION Y chromosome sex determining region, Yp pseudoautosomal
boundary, PAB1.
ACCESSION GB_PR:HSCAMF3X1

DEFINITION creatine transporter and paralogous genes, pericentomeric
repeats on chromosome 16.
ACCESSION GB_PR:HSU41302

DEFINITION cathepsin D (cat D) gene, exon 5.
ACCESSION GB_PR:HUMCATD3

DEFINITION	argininosuccinate synthetase gene 5' end, CpG island
ACCESSION	GB_PR:HSASG5E
DEFINITION	argininosuccinate synthetase gene 5' end, CpG island
ACCESSION	GB_PR:HUMAS1
DEFINITION	vimentin gene, 5' regulatory region, CpG island.
ACCESSION	GB_PR:HUMVIM
DEFINITION	vimentin gene, exon 1, 5' end CpG island.
ACCESSION	GB_PR:HUMVIM02
DEFINITION	vimentin gene, 5' end, CpG island.
ACCESSION	GB_PR:HUMVIMAA
DEFINITION	vimentin gene, 5' end, CpG island
ACCESSION	GB_PR:HSVIM5RR
DEFINITION	chromosome 22 DNA *SEQUENCING IN PROCESS*, CpG island
ACCESSION	GB_HTG:HS170A21

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FIG. 10.

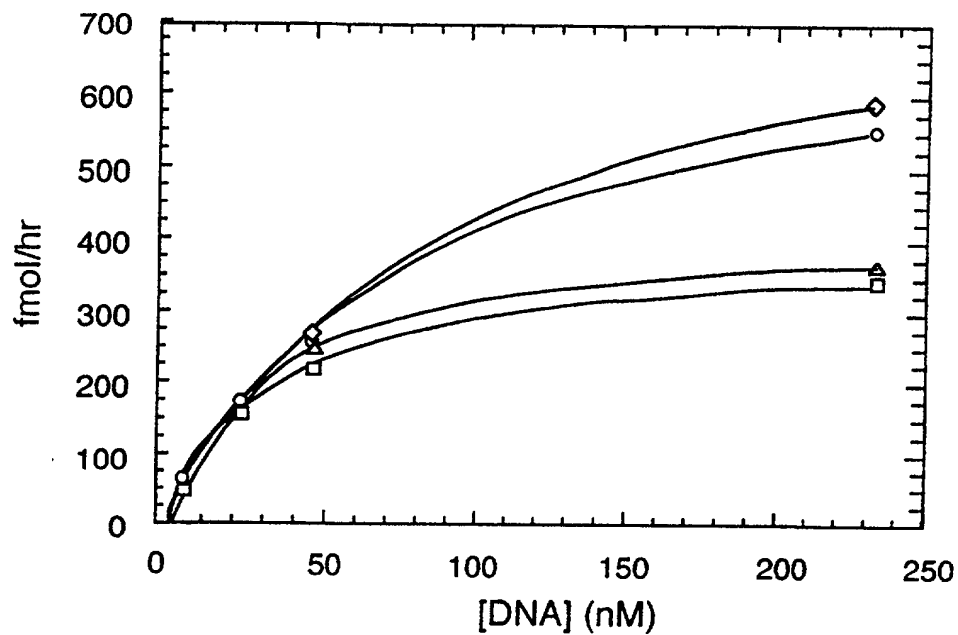


FIG. 13.

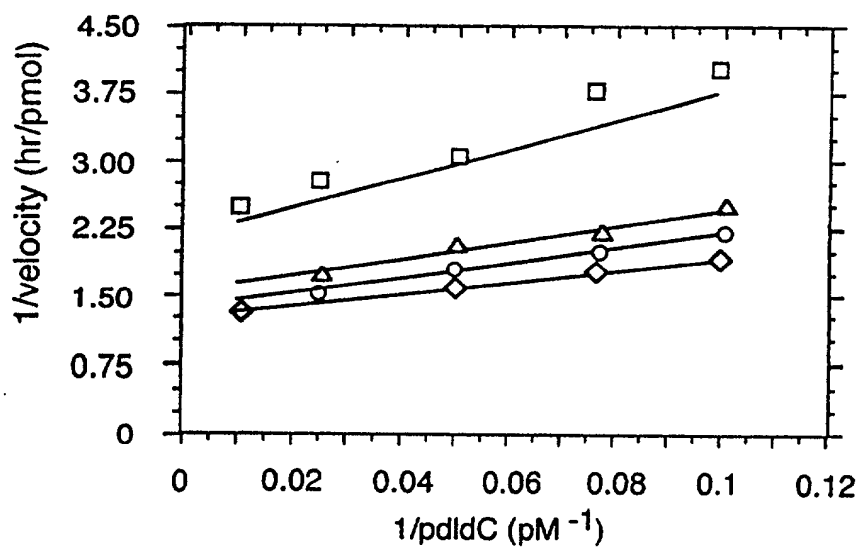
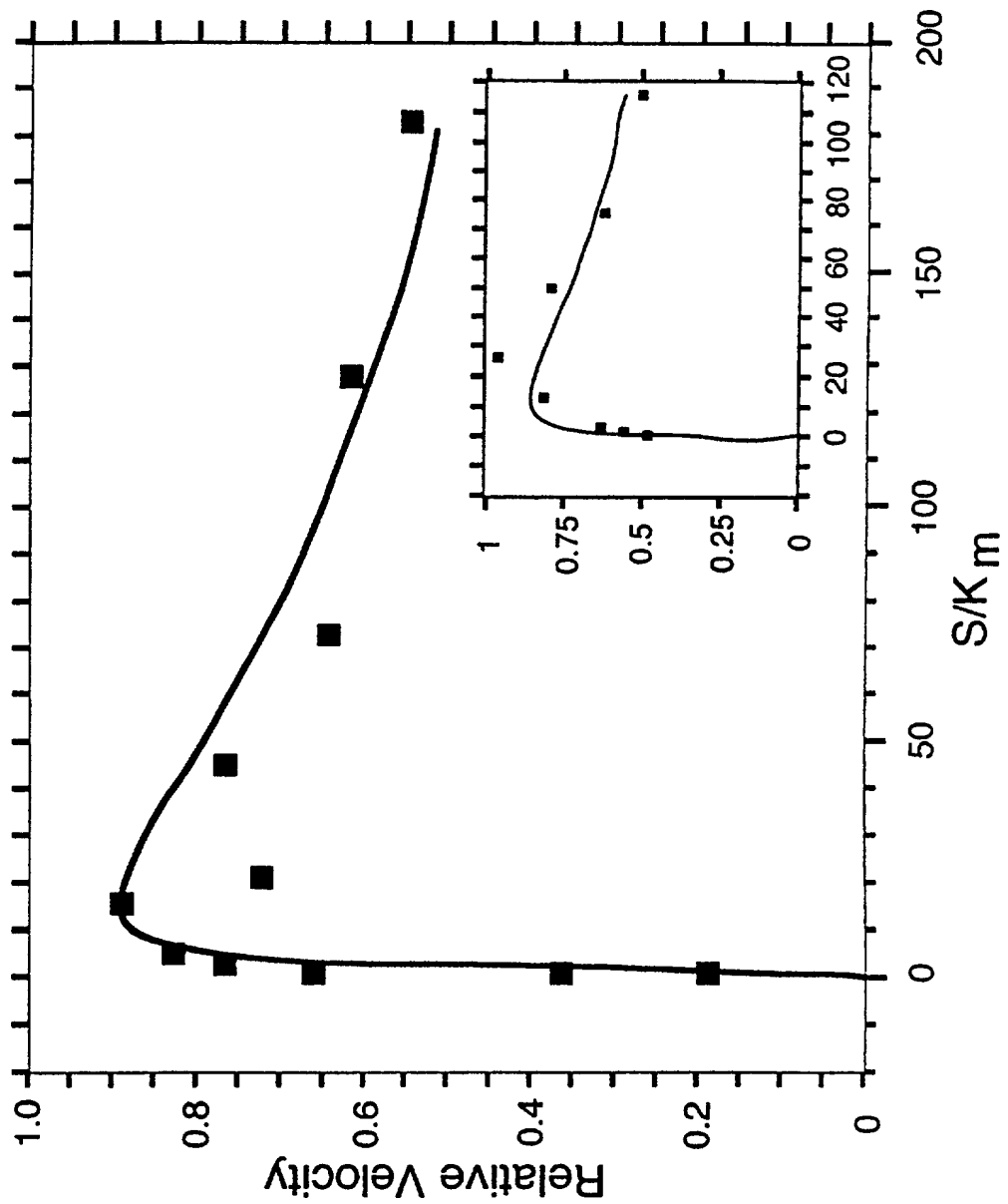


FIG. 11.



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FIG.12a.

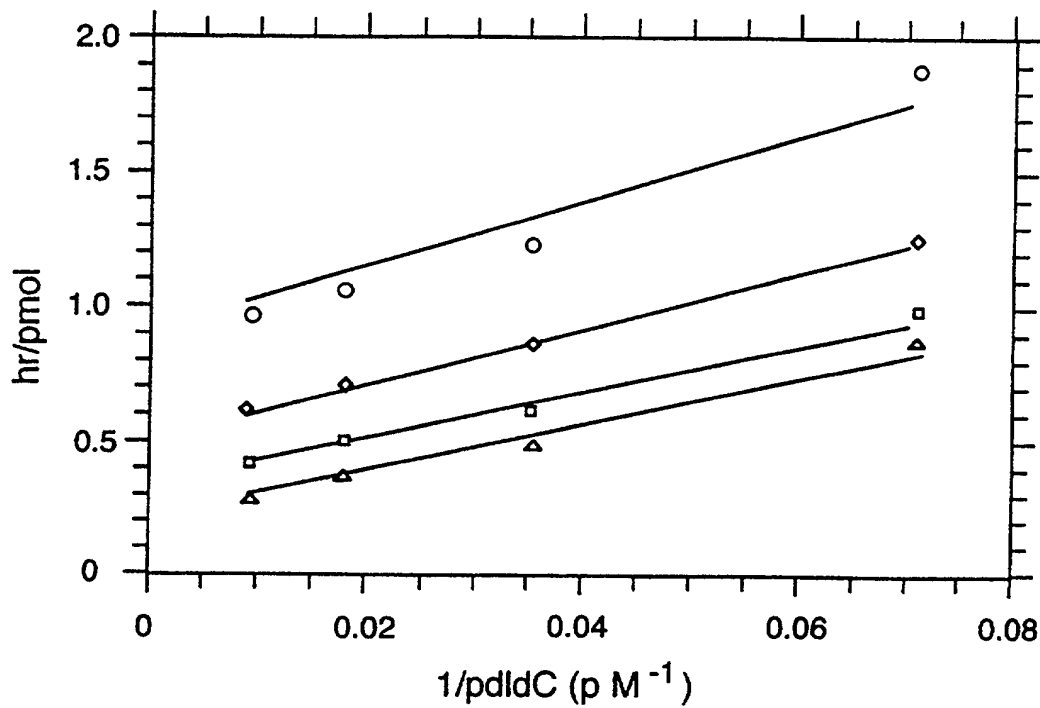
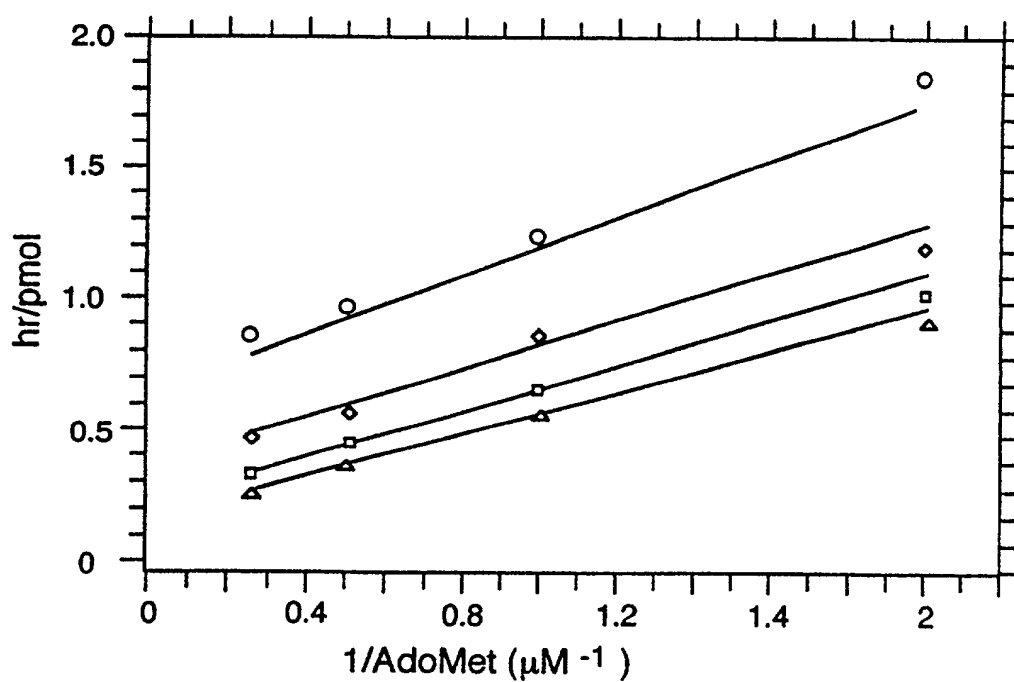


FIG.12b.



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FIG.14.

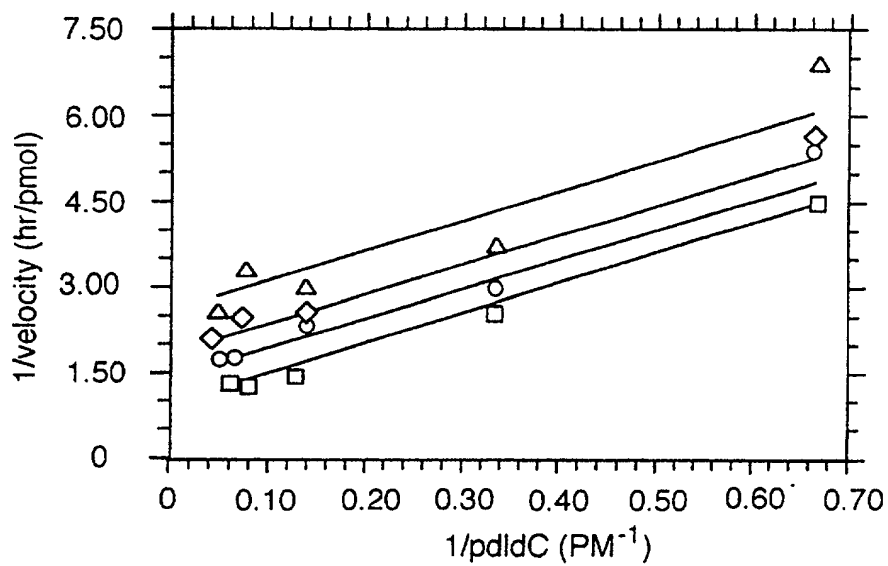
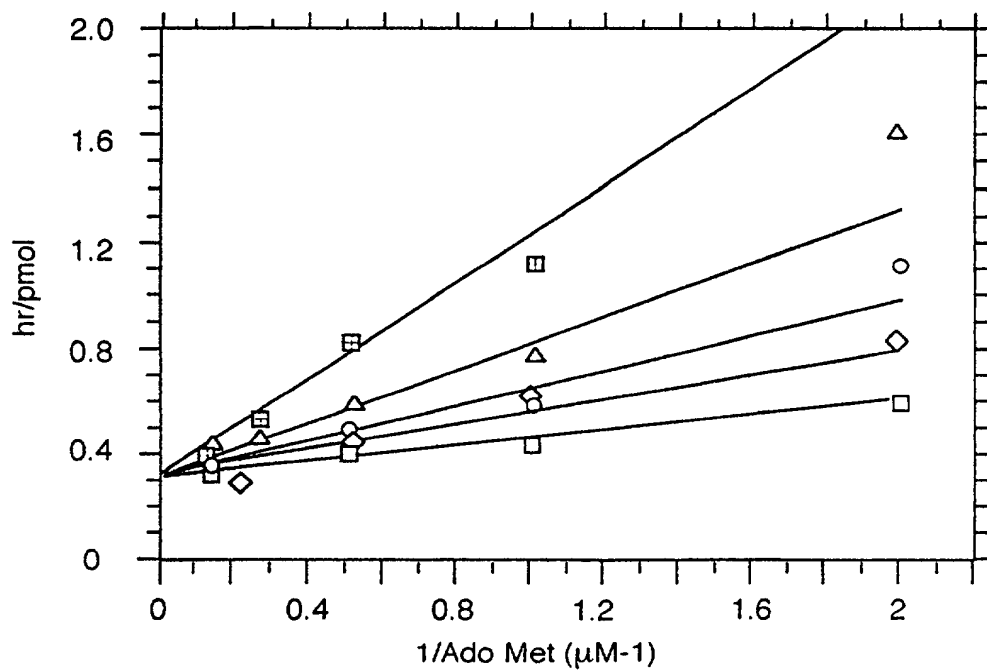
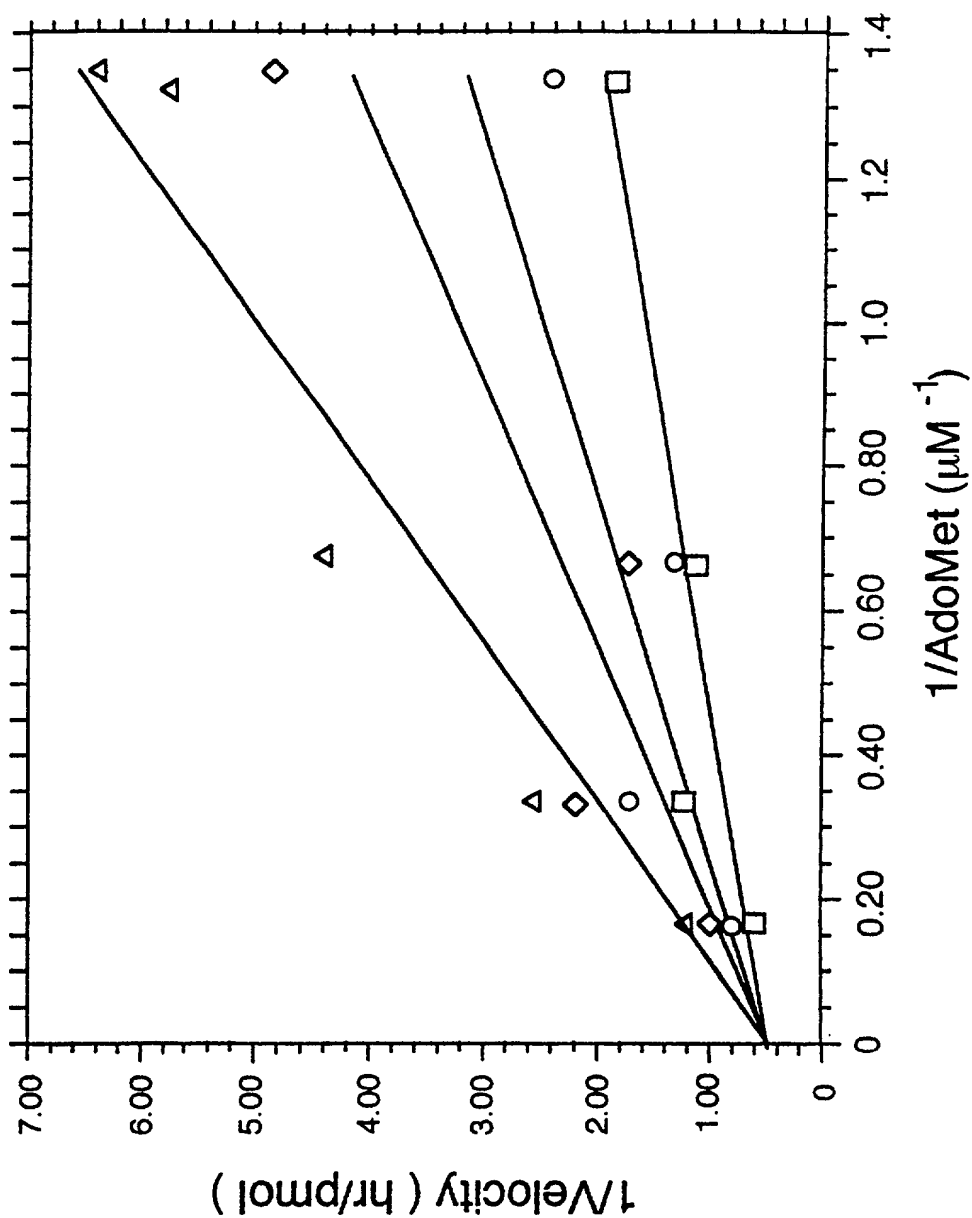


FIG.16.



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FIG. 15.



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FIG. 17a.

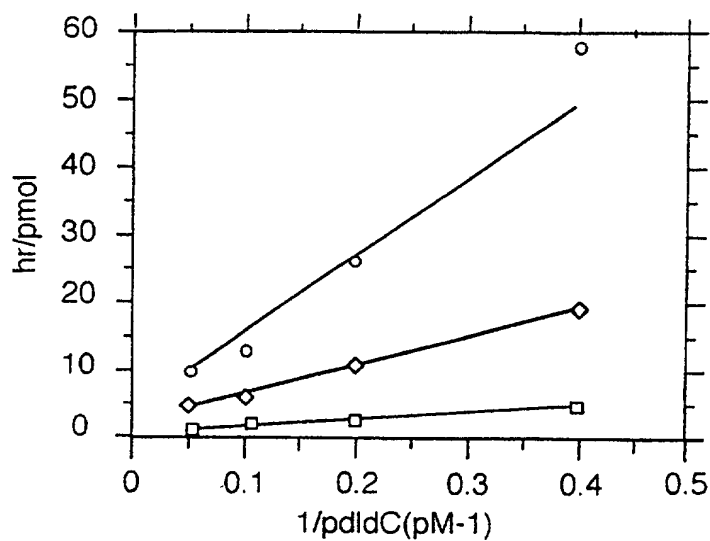


FIG. 17b.

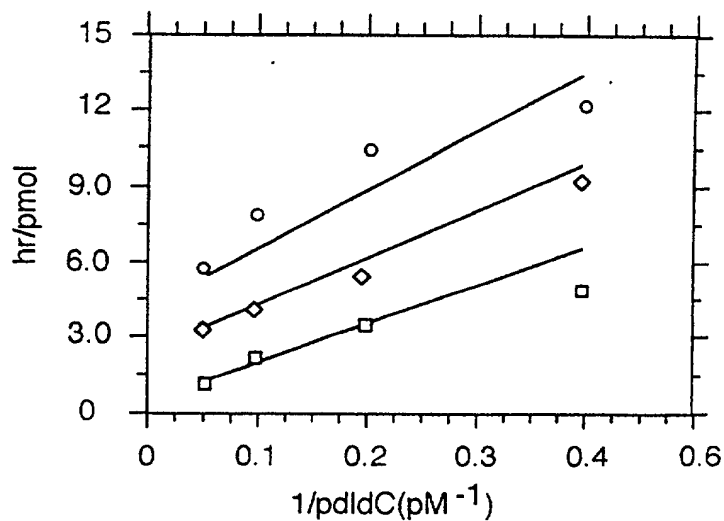
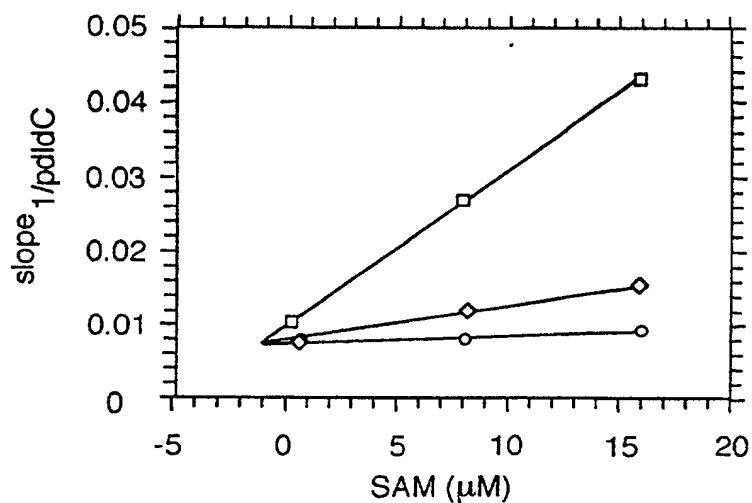


FIG. 17c.



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FIG. 18.

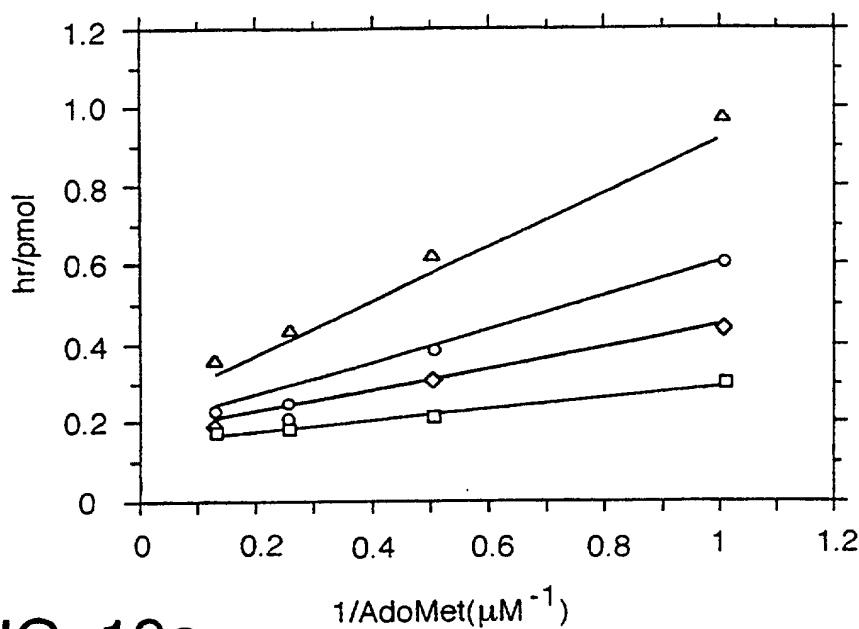


FIG. 19a.

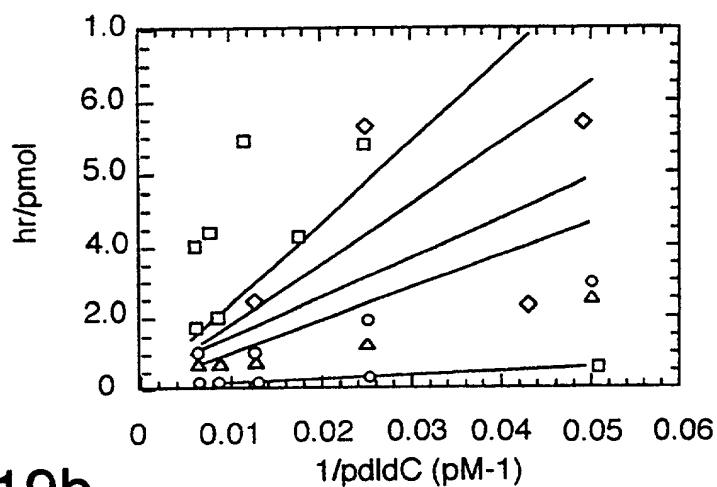
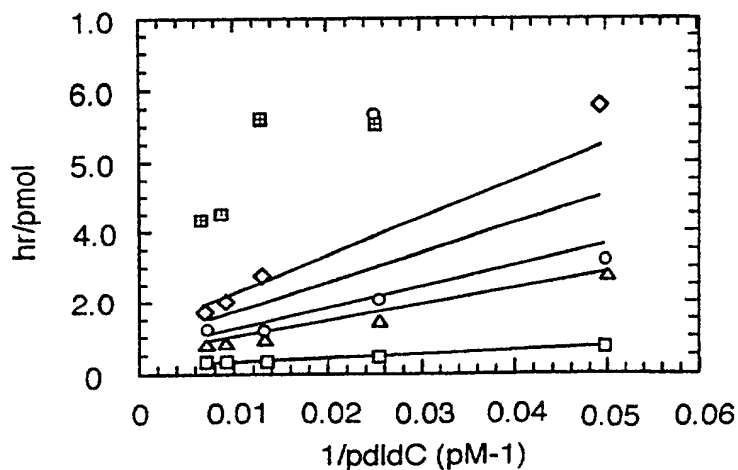


FIG. 19b.



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FIG.20.

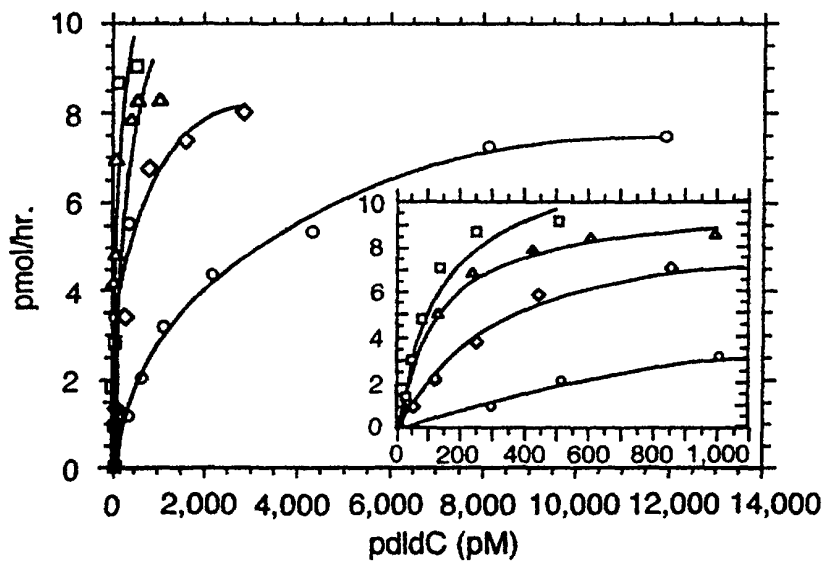


FIG.21.

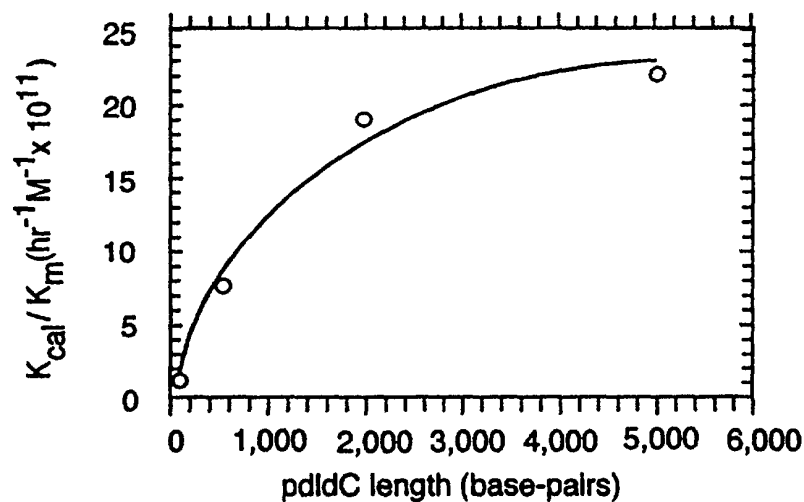


FIG.22.



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FIG.23a.

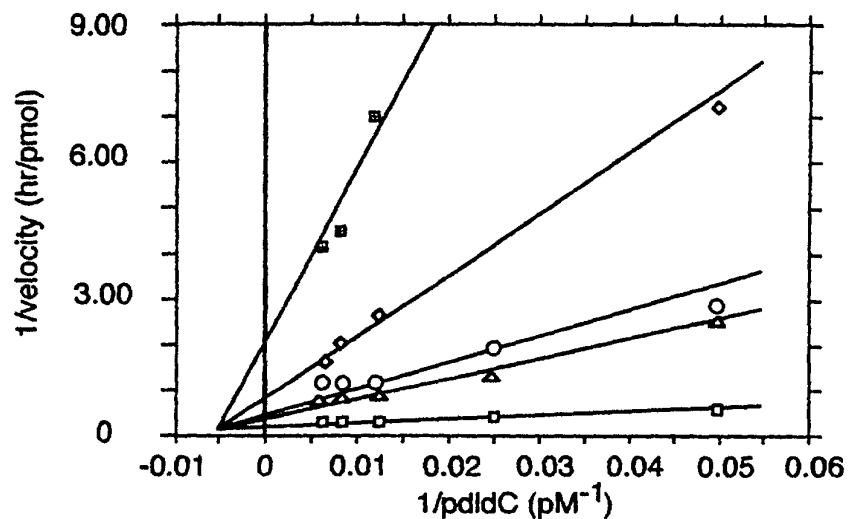


FIG.23b.

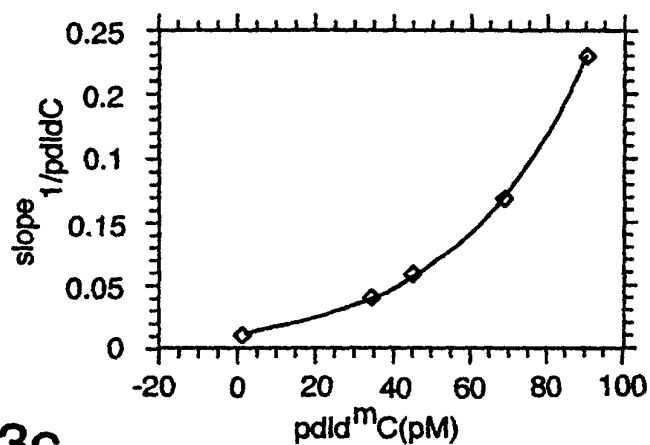


FIG.23c.

